The Value of Healthcare Information Exchange and Interoperability in New York State

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Abstract: With heightened interest in Regional Healthcare Information Organizations, policy makers may require guidance on the potential benefits and costs of systems that enable healthcare information exchange and interoperability (HIEI) in their communities. The United Hospital Fund of New York (UHF) engaged CITL to determine the net value of electronic transactions between state healthcare stakeholders with the goal to inform New York healthcare IT policy discussion.

Analytic Framework: CITL projected the value of electronic data transactions flowing from clinical encounters between providers (hospitals and medical group practices) and other providers, and between providers and five key state healthcare stakeholders with which they exchange information most commonly: independent laboratories and radiology centers, pharmacies, payers, and public health departments. The New York HIEI model quantifies the value of the state's entire health care system moving from today's prevailing phone and mail communications to an idealized state of full computer-to-computer, standardized data exchange with minimal human involvement. CITL adapted an existing model developed for the nation[1,2], incorporating state specific inputs provided by UHF or prorated from national figures. The New York HIEI model projects net value over an initial 10-year implementation period as well as annual, steady-state net value after full implementation.

Costs of HIEI: The New York analysis considers costs of internal clinical and administrative systems for providers as well as interfaces between provider and stakeholder systems. Stakeholder system costs (e.g., within laboratories and pharmacies) are not included. Costs of implementing HIEI systems statewide are estimated at $1.75 billion annually after the initial 10 year implementation period.

Benefits of HIEI: Connectivity between providers and external laboratories and radiology centers would enable computer-assisted reduction of redundant tests and would reduce delays and costs associated with paper-based ordering and reporting of results, saving the state $2.50 billion in laboratory savings and $1.51 billion in radiology savings annually after full implementation. Interoperability between outpatient providers and pharmacies would reduce the administrative overhead to transmit and clarify prescriptions, saving New York $221 million annually after full implementation. Provider-provider connectivity would save time associated with handling chart requests and referrals, saving the state $1.01 billion annually. Payer-provider connectivity would reduce delays and costs associated with paper-based billing, saving an estimated $1.04 billion statewide per year. Provider connectivity to the public health system would make reporting of vital statistics and cases of reportable diseases more efficient and complete, saving the state an estimated $15.3 million per year.

Net Value of HIEI: Combining the benefits and costs quantified above, fully standardized HIEI could yield New York state a net value of $4.54 billion each year after full implementation. Even while incurring costs of installing systems during the 10-year implementation period, interoperability is financially positive, netting New York an estimated $12.4 billion in savings.

Conclusion: Once fully implemented, standardized HIEI could yield New York state a net value of $4.54 billion annually, or approximately 3.3% of total 2003 state health care expenditures. This is lower than the national proportion of 4.7%, largely due to three factors. First, New York has more physicians per capita than the U.S., making office system costs relatively higher. Second, New York's radiology tests cost less than the national average and, as a result, avoided tests do not incur as much benefit. Lastly, New York already handles more provider-payer transactions electronically than the rest of the country, thus there is less opportunity to derive value from HIEI in comparison to the U.S. as a whole.

1. Pan E, et al. The Value of Healthcare Information Exchange and Interoperability. Chicago: HIMSS, 2005.
2. Walker J, et al. The Value of Health Care Information Exchange and Interoperability. Health Affairs. January 19, 2005.